CLAIMS:

1. A method for preparing a blood product concentrate for storage, comprising:

(1) suspending said blood product concentrate in a support solution, to obtain a suspension of said blood product concentrate; and

(2) irradiating said suspended blood product concentrate, to effect sterilization and inactivation of leukocytes, to obtain an irradiated, suspended blood product concentrate,

wherein:

said blood product concentrate is selected from the group consisting of red blood cell concentrates and platelet concentrates; and

said support solution comprises a compound selected from the group consisting of L-carnitine, salts of L-carnitine, alkanoyl L-carnitines, salts of alkanoyl L-carnitines, and mixtures thereof, and said compound is present in said support solution in an amount effective to maintain the membrane of red blood cells or platelets present in said irradiated, suspended blood product concentrate.

2. The method of Claim 1, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

3. The method of Claim 1, wherein said compound is L-carnitine.

4. The method of Claim 1, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

5. The method of Claim 1, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

6. The method of Claim 1, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

7. The method of Claim 1, wherein said blood product concentrate is a red blood cell concentrate.

8. The method of Claim 7, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

9. The method of Claim 7, wherein said compound is L-carnitine.

10. The method of Claim 7, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

11. The method of Claim 7, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

12. The method of Claim 7, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

13. The method of Claim 7, wherein said blood product concentrate is a platelet concentrate.

14. The method of Claim 13, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

15. The method of Claim 13, wherein said compound is L-carnitine.

16. The method of Claim 13, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

17. The method of Claim 13, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

18. The method of Claim 13, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

19. A sealed container comprising an irradiated, suspended blood product concentrate, wherein said irradiated, suspended blood product concentrate is prepared by a method comprising:

(1) suspending said blood product concentrate in a support solution, to obtain a suspension of said blood product concentrate; and

(2) irradiating said suspended blood product concentrate, to effect sterilization and inactivation of leukocytes, to obtain an irradiated, suspended blood product concentrate,

wherein:

said blood product concentrate is selected from the group consisting of red blood cell concentrates and platelet concentrates; and

said support solution comprises a compound selected from the group consisting of L-carnitine, salts of L-carnitine, alkanoyl L-carnitines, salts of alkanoyl L-carnitines, and mixtures thereof, and said compound is present in said support solution in an amount effective to maintain the membrane of red blood cells or platelets present in said irradiated, suspended blood product concentrate.

20. The sealed container of Claim 19, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

21. The sealed container of Claim 19, wherein said compound is L-carnitine.

22. The sealed container of Claim 19, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

23. The sealed container of Claim 19, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

24. The sealed container of Claim 19, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

25. The sealed container of Claim 19, wherein said blood product concentrate is a red blood cell concentrate.

26. The sealed container of Claim 25, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

27. The sealed container of Claim 25, wherein said compound is L-carnitine.

28. The sealed container of Claim 25, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

29. The sealed container of Claim 25, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

30. The sealed container of Claim 25, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

31. The sealed container of Claim 19, wherein said blood product concentrate is a platelet concentrate.

32. The sealed container of Claim 31, wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

33. The sealed container of Claim 31, wherein said compound is L-carnitine.

34. The sealed container of Claim 31, wherein said compound is L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

35. The sealed container of Claim 31, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

36. The sealed container of Claim 31, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine and wherein said compound is present in said support solution in a concentration of 0.25 to 50 mM.

37. A method for suppressing bacterial growth in whole blood or a fraction thereof, comprising adding to whole blood or a blood fraction a compound selected from the group consisting of L-carnitine, salts of L-carnitine, alkanoyl carnitines, salts of alkanoyl carnitines, and mixtures thereof, in an amount effective to suppress bacterial growth in said whole blood or blood fraction.

38. The method of Claim 37, wherein said blood fraction is selected from the group consisting of packed red blood cells, packed white blood cells, platelet concentrates, plasma, and plasma derivatives.

39. The method of Claim 38, wherein said blood fraction is packed red blood cells, and wherein said method comprises suspending said packed red blood cells in a support solution which comprises said compound.

40. The method of Claim 38, wherein said blood fraction is packed white blood cells, and wherein said method comprises suspending said packed white blood cells in a support solution which comprises said compound.

41. The method of Claim 38, wherein said blood fraction is a platelet concentrate, and wherein said method comprises suspending said platelet concentrate in a support solution which comprises said compound.

42. The method of Claim 38, wherein said blood fraction is plasma or a plasma derivative, and wherein said method comprises suspending said plasma or plasma derivative in a support solution which comprises said compound.

43. The method of Claim 37, wherein said compound is comprised in a support solution in a concentration of 0.25 to 50 mM.

44. The method of Claim 37, wherein said compound is comprised in a support solution in a concentration of 1 to 30 mM.

45. The method of Claim 37, wherein said compound is L-carnitine.

46. The method of Claim 37, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.

47. A method of reducing glycolysis in whole blood or a fraction thereof, comprising adding to whole blood or a blood fraction a compound selected from the group consisting of L-carnitine, salts of L-carnitine, alkanoyl carnitines, salts of alkanoyl carnitines, and mixtures thereof, in an amount effective to reduce glycolysis in said whole blood or blood fraction.

48. The method of Claim 47, wherein said blood fraction is selected from the group consisting of packed red blood cell, packed white blood cells, platelet concentrates, plasma, and plasma derivatives.

49. The method of Claim 48, wherein said blood fraction is packed red blood cells, and wherein said method comprises suspending said packed red blood cells in a support solution which comprises said compound.

50. The method of Claim 48, wherein said blood fraction is packed white blood cells, and wherein said method comprises suspending said packed white blood cells in a support solution which comprises said compound.

51. The method of Claim 48, wherein said blood fraction is a platelet concentrate, and wherein said method comprises suspending said platelet concentrate in a support solution which comprises said compound.

52. The method of Claim 48, wherein said blood fraction is plasma or a plasma derivative, and wherein said method comprises suspending said plasma or plasma derivative in a support solution which comprises said compound.

53. The method of Claim 47, wherein said compound is comprised in a support solution in a concentration of 0.25 to 50 mM.

54. The method of Claim 47, wherein said compound is comprised in a support solution in a concentration of 1 to 30 mM.

55. The method of Claim 47, wherein said compound is L-carnitine.

56. The method of Claim 47, wherein said compound is selected from the group consisting of acetyl L-carnitine, propionyl L- carnitine, butyryl L-carnitine, isobutyryl L-carnitine, valeryl L-carnitine, and isovaleryl L-carnitine.